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ABSTRACT

Discourse analysis attempts to identify and describe the semantic relationships among units of thought larger than a word (predications). Two basic types of these relationships exist between predications, conceptual and nonconceptual. A conceptual relationship exists between two predications when they share a concept or when a concept in one refers to a set of concepts (or the whole predication) in another. Conceptual relationships are signaled by the following references: same word, pronoun, synonym, metaphoric, wh-word, deleted subject, related concept, and whole predication. As the name implies, nonconceptual relationships do not require a shared concept between predications. There are five types of nonconceptual relationships: (1) causal, (2) contrastive, (3) additive, (4) temporal, and (5) embedded. The techniques of discourse analysis can be applied to language research and measurement to determine if there is a relationship between age and the use of conceptual and nonconceptual relationships, and to examine differences in these relationships across different modes of discourse. In language instruction, the overt teaching of the relationships could help increase language proficiency. Because they use signal words, nonconceptual relationships lend themselves particularly well to instructional use. (JL)

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PRINCIPLES OF DISCOURSE ANALYSIS:

EXPLANATION AND APPLICATIONS

by

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PRINCIPLES OF DISCOURSE ANALYSIS:

EXPLANATION AND APPLICATIONS

INTRODUCTION

Recent years have seen great advances in techniques for discourse analysis (Kintsch, 1974; Halliday and Hasan, 1976; Turner and Greene, 1977). Unfortunately, most of the techniques used and the discussions of those techniques are not very useful in an educational setting whether that setting be oriented to research or instruction. This is primarily because most discussions of discourse analysis are meant for audiences other than educators (e.g., linguists, cognitive psychologists). The purpose of this paper is to present some basic principles of discourse analysis—stated in such a way as to be applicable to educational research and instruction. Although my discussion will cover the same basic areas that are covered by all discourse grammars, the reader knowledgeable of the literature will see that the version presented here has some unique characteristics. It should also be noted that my discussion here will necessarily be an overview. For a detailed discussion of all principles and techniques presented in this paper, the reader should consult A Quantitative Grammar of Meaning and Structure (Marzano, 1982).

What is discourse analysis? At its core it is an attempt to identify and describe the semantic (meaning) relationships that exist among units of thought larger than a word (e.g., sentences, clauses, verb phrases). For example, if we tried to describe the semantic relationship that ties the following two sentences together (makes

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them "cohesive") we would be involved in discourse analyses:

I was tired yesterday. Nevertheless I went to work.

There is a fair amount of variation in the literature on what should constitute the "unit of thought larger than the word." Some analysts use the clause; those in cognitive psychology most commonly use the "proposition" which, roughly translated, is equivalent to what transformational grammarians used to call the "kernel sentence." For this paper I will use what will be called the "predication" as the basic unit of analysis. A predication consists of any verb form (finite or nonfinite) with all its related concepts. In traditional grammar terminology, a predication translates into any of the following structures: main and subordinate clauses, infitive phrase, participial phrase, gerund phrase, and compound verb phrases. Thus, there are four predications in the sentence below:

> I saw Bill running down the street to watch the accident and see the fire engines.
>
> Predication #1. I saw Bill
> Predication #2. running down the street
> Predication #3. to watch the accident
> Predication #4. see the fire engines.

I have chosen the predication primarily for its ease of identification--any verb form automatically represents a predication. Throughout this paper I will use the terms predication and unit of thought interchangeably. In the following, I will first present some basic principles of discourse analysis and then discuss the application of those principles.

PRINCIPLES OF DISCOURSE ANALYSIS

As was stated above, discourse analysis is the identification and description of the semantic reltionship that exists between units of

thought larger than a word--in the context of this paper, between predications. There are two basic types of semantic relationships that can exist between predications: 1) conceptual relationships and (2) nonconceptual relationshps. We will consider conceptual relationships first.

Conceptual Relationships

Conceptual relationships are the primary (most frequently used) method of tying ideas together. A conceptual relationship exists between two predications when they share a concept or when a concept in one predication refers to a set of concepts (or the whole predication) in another. To illustrate, consider the following set of predications:

a) Sally likes Bill.

b) He is a friend of hers.

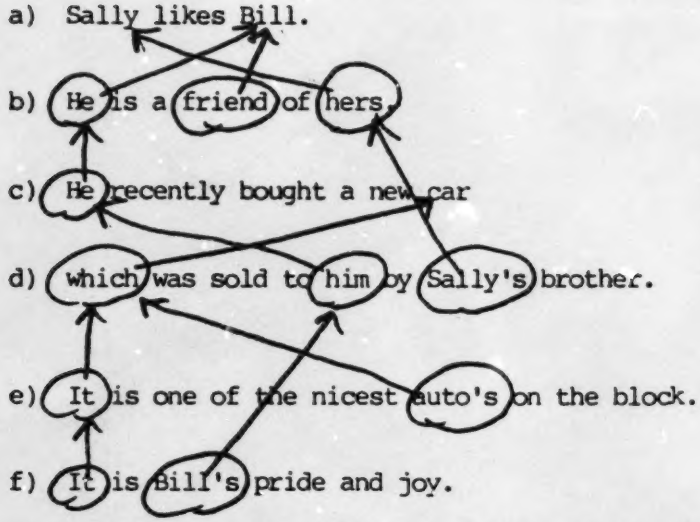
c) He recently bought a new car

d) which was sold to him by Sally's brother.

e) It is the nicest auto on the block.

f) It is Bill's pride and joy.

Predication a and b share the concepts Sally and Bill (He in b refers to Bill; hers in b refers to Sally). If we connected all related concepts in this set of predications, the result would look like the following:


a) Sally likes Bill.
b) He is a friend of hers.
c) He recently bought a new car
d) which was sold to him by Sally's brother.
e) It is one of the nicest auto's on the block.
f) It is Bill's pride and joy.

There are eight ways that conceptual relationships are signaled between predications. We will consider each briefly.

1) Same Word Reference: The most obvious and straightforward way of signaling a shared concept between predications is to use the same word to express the concept in both predications:

e.g. Bill is my friend.
Everyone likes Bill.

2) Pronoun Reference: The most commonly used method of signaling conceptual relationships is to use a pronoun to represent a previously stated concept:

e.g. Bill is my friend.
Everyone likes him.

Here I am restricting the pronouns used in this category to the following: I, me, you, we, us, he, him, she, her, they, them, it, these, those, there, here. The use of all of these pronouns is fairly obvious except for the last two. There and here signal pronoun reference when they refer to a noun which names a specific place:

e.g. I went to Chicago last summer.

There I found true love.

3) Synonym Reference: Synonym reference occurs when a concept in one predication is expressed as a synonym in another;

e.g. Yesterday Bill bought a new car.

This automobile is the answer to his prayers.

4) Metaphoric Reference: Metaphoric reference is similar to synonym reference except that a direct synonym is not used to represent the shared concept. Instead, a word or phrase not normally considered a synonym is used:

e.g. Bill went to Seattle for the summer.

This haven for the weary is located in the northwest.

5) Wh-word Reference: There are many different variations to wh-word reference. In general, it is signaled whenever any of the following wh words are used to refer to some previously stated concept: who, whom, which, that, what, where, how, why, whoever, whatever, however, wherever. The first four wh-words, who, whom, which and that, are commonly used as what traditional grammarians call relative pronouns. In such situations they refer to the immediately preceeding concept:

e.g. I know the man who is over there.

a) I know the man

b) who is over there

This is the car that I want

a) This is the car

b) that I want

In some situations the wh-word can be omitted because its existence is understood.

e.g. This is the car (that) I want.

When the wh-words where, how, why and what are used the concept they refer to (called the "antecedent concept") is commonly, if not always, omitted.

e.g. I know (the place) where he stayed.

I know (the manner) how he escaped.

I know (the reason) why he left.

I know (the object) what I want.

The wh-words whoever, whomever, whatever, however and wherever are used when the antecedent concept is not only deleted but is unknown to the speaker or writer:

e.g. Bill will marry (the person) whomever he likes.

6) Deleted Subject Reference: This form of conceptual relationships always occurs in the following constructions: 1) participles, 2) infinities, 3) gerunds, and 4) compound predicates. To illustrate, consider the following:

e.g. The boy running down the street likes the girl sitting on the porch.

Here there are three predications:

a) The boy likes the girl

b) (boy) running down the street

c) (girl) sitting on the porch

It is understood that boy is the subject of predication b and girl the subject of c. This is the case with all constructions listed above. They always contain a deleted but understood concept in the subject slot.

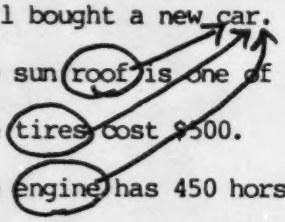
7) Related Concept Reference: Related concept reference occurs whenever a concept is used in one predication which is logically related to a concept stated in a preceeding predication. To illustrate, consider the following:

a) Bill bought a new car.

b) The sun roof is one of its best features.

c) The tires cost $500.

d) The engine has 450 horsepower.



Here the concepts roof, tires and engine are all considered "related concepts" to car stated in predication a. There are three types of related concept relationships:

a) Part to Whole: The example above is part to whole. Roof, tires and engine are "parts" of the whole--car.

b) Member of a set or class: Consider the following:

a) Animals are intelligent beings

b) Dogs can understand many things

c) Chimps are considered as smart as human infants

d) Even rats can learn complex tricks

Above dogs, chimps and rats are members of the general set or class called animals.

c) Ownership/Possession: When a concept is introduced which is owned or possessed by another previously stated concept, the relationship is considered to be that of related concept. Usually possessive pronouns or nouns in the genetive case are used to signal this type of conceptual relationship:

e.g. I like Bill.

His sister is nice too.

8) Whole Predication Reference: This type of conceptual relationship between predication occurs when a word in one predication refers to a previously stated, entire predication:

e.g. a) Bill hit Mark.

b) This bothered Mary.

The word this in predication b refers to the entire event stated in predication a. Technically there is no shared concept between the two. I choose to classify this relationship as conceptual because in terms of form it follows the same pattern as all conceptual relationships; specifically a word in one predication refers to something in a previous predication. There are other more technical similarities between whole predication reference and the other types of conceptual relationships. For a detailed discussion see the Quantitative Grammar cited previously.

Commonly the words this, that and which are used to signal whole predication reference:

e.g. a) Bill hit Mark

b) which bothered Mary.

A special type of whole predication reference is signaled by the words there and it. Consider the following:

a) The Smith family went on a picnic.

b) There was not a cloud in the sky.

c) It was a beautiful day.

Here the words there and it refer not specifically to the event expressed in a but to the situation in which the event expressed in a occurred.

NONCONCEPTUAL RELATIONSHIPS

As the name implies, nonconceptual relationships are those that do not require a shared concept between the related predications. For example, consider the following:

Mark went home because the party ended.

Here the two predications do not have an overtly stated shared concept:

a) Mary went home.

b) The party ended.

There is, however, an obvious relationship between the two signaled by the word "because." That relationship is one of causation; predication b was the motivating force behind the event expressed in a. Causation is one of five types of relationships that do not depend on the sharing of a concept. This is not to say that two predications with a nonconceptual relationship can not also have a conceptual relationship. Indeed, among any set of predications there will be many conceptual and nonconceptual relationships forming two networks which bind the ideas together. We will briefly consider each of the five types of nonceptual relationship and their subtypes.

1) Causal Nonceptual Relationships: There are five types of causal nonceptual relationships. They are exemplified below:

a) Direct Cause:

He won the race by maintaining his concentration.

b) Result:

Bill went home. Consequently the party ended.

c) Reason:

He went to the store because he needed food.

d) Inference:

Mary is going on a long trip. In that case she should plan well.

e) Condition:

Unless you stop, I will leave.

In all of the examples above, one predication is consdiered to be a causal factor in the action expressed by the other. Note also that in each pair of predications there is a word or phrase which "signals" the specific type of relationship (see circled words). I will call these words/phrases "signal words" and discuss their utility in the section on application of discourse analysis.

2) Contrastive Nonconceptual Relationships: There are four subtypes of contrastive relationships. The essence of each is that the idea in one predication is being likened to the idea expressed in another predication in a negative sense. That is, the ideas expressed in the predications are being labeled as different in some sense. The four subtypes of contrastive relationships are exemplified below:

a) Antithesis:

I will be there, but I won't be happy.

b) Alternative:

Either it will rain or it will snow.

c) Comparison:

Bill is tall. In comparison his brother is short.

d) Concession:

I don't like violence. Nonetheless, I'll meet you at the fights.

3) Additive Nonconceptual Relationships: Additive nonconceptual relationships are like contrastive except that the likeness of the predications is a function of their "sameness" rather than their difference. Thus, contrastive relationships signal a difference; additive relationships signal a sameness. There are five types of additive nonconceptual relationships:

a) Equality:

He is tall, and he is handsome.

b) Restatement:

I am tired. In fact, I am exhausted.

c) Example:

He does many things well. For example, he is excellent at cards.

d) Ordered Example:

He does many things well.
First, he is excellent at cards.
Second, he plays tennis like a pro.
Third, he is a superb cook.

e) Summation:

He does many things well.
He cooks.
He sews.
In all he is an excellent homemaker.

4) Temporal Nonconceptual Relationships: Temporal nonconceptual relationships signal the order of time in which the events stated in a set of predications occur. There are four subtypes of temporal relationships:

a) Subsequent Action:

They went to the game. Afterward they went to the dance.

b) Prior Action:

They went to the dance after they went to the game.

c) Concurrent Action:

Bill thought about Mary while Mary thought about Bill.

d) Ordered Action:

I did many things this morning.
First, I got up.
Next, I got dressed.
Then, I ate breakfast.

5) Embedded Nonconceptual Relationships: To illustrate embedded nonconceptual relationshp consider the following:

That I play golf bothers my wife.

Here there are the two predications:

a) (I play golf)

b) ↓ bothers my wife.

The function of the first predication is to act as an element (concept) in the second predication. Whenever a predication acts as a basic concept in another predication we call the relationship embedded. We could name the semantic function of the embedded predication. For example, the relationship a above has to b might be labeled stimulus. In general these relationships will parallel the case categories found in most case grammars. For a description of twenty-one embedded relationship types see Marzano (1982). For this paper I will simply refer to all such relationships as embedded without further specifying the type.

Embedded predications commonly have the syntactic form of noun clause, gerund or infinitive. When the form is noun clause, the signal words "that" or "the fact that" are commonly used:

e.g. The fact that I play golf bothers my wife.

We should note here the semantic similarity between embedded nonconceptual relationships and whole predication conceptual reference. Consider the following:

a) Whole Predication Conceptual Relationship

Bill hit Mark

This bothered Mary.

b) Embedded Nonconceptual Relationship

That Bill hit Mark

_____ bothered Mary.

As these examples illustrate many types of embedded nonconceptual relationships are semantically identical to some conceptual whole predication relationships. Indeed, in some discourse grammars these two types of relationships are classified under the same general heading. My reason for separating the two is based on form rather than function. As was stated previously, whole predication reference is signaled by a word (this, that, which) which has a basic function within its own predication. With embedded relationships one predication is logically and syntactically incomplete without the other. These reasons seem strong enough to me to separate the two types of relationships with the understanding and recognition of their semantic similarities.

APPLICATION

What does all of this mean for education? I feel there are two areas where principles of discourse analyses can greatly aid education:

1) language research and measurement; and 2) language instruction. We will consider each briefly.

Language Research/Measurement

There are some fairly obvious research questions which to date have not been answered. A sample of these is:

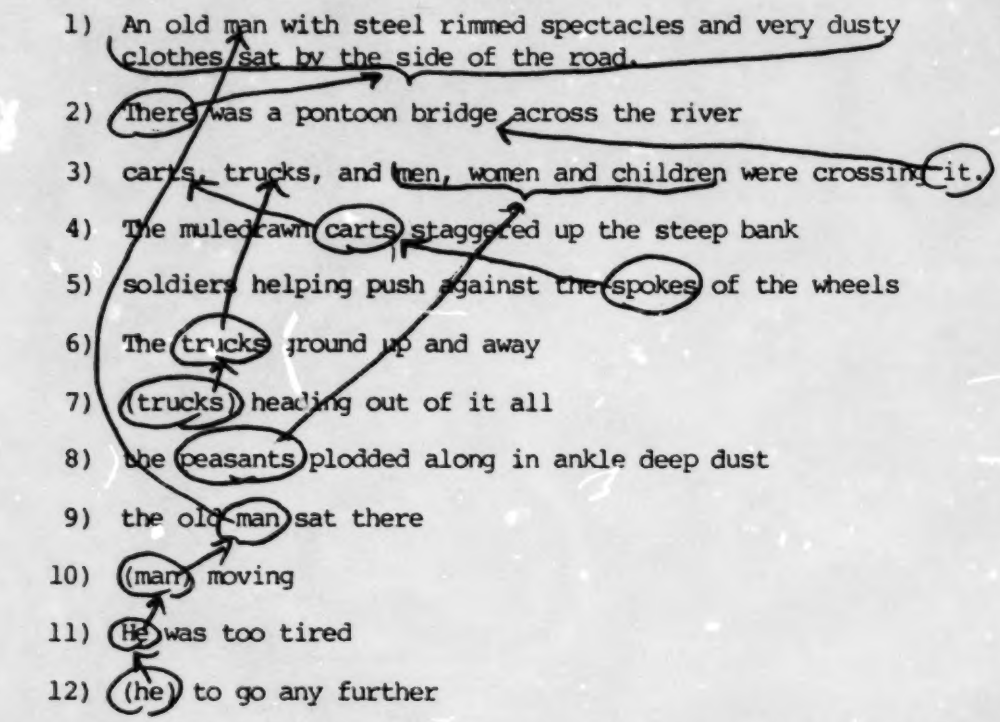
—Is there an age related developmental sequence in the use of various conceptual and nonconceptual relationships?

--Is there a difference in the use of various types of conceptual and nonconceptual relationships across different modes of discourse?

Currently research aimed at answering these and related research questions is being conducted by this writer and, no doubt, many others interested in the applications of discourse analysis. Unfortunately most of that research is still in progress and has not filtered down into the literature. The basic data analysis technique for most of this research is a simple comparison of the relative frequencies for different types of relationships. However, many of the principles of discourse analysis described in this paper lend themselves to some new language measurement techniques. Specifically, nonconceptual relationships can be used to study patterns of cohesion among sets of predications. To illustrate consider the following passage:

> An old man with steel rimmed spectacles and very dusty clothes sat by the side of the road. There was a pontoon bridge across the river, and carts, trucks, and men, women and children were crossing it. The muledrawn carts staggered up the steep bank from the bridge with soldiers helping push against the spokes of the wheels. The trucks ground up and away heading out of it all and the peasants plodded along in the ankle deep dust. But the old man sat there without moving. He was too tired to go any further.

Below I have mapped only the first conceptual relationship in each of the predication in the passage. I call this the "primary line of conceptual reference" in a set of predications:

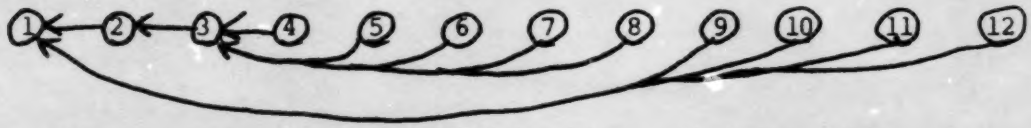

1) An old man with steel rimmed spectacles and very dusty clothes sat by the side of the road.
2) There was a pontoon bridge across the river
3) carts, trucks, and men, women and children were crossing it.
4) The mule-drawn carts staggered up the steep bank
5) soldiers helping push against the spokes of the wheels
6) The trucks ground up and away
7) (trucks) heading out of it all
8) the peasants plodded along in ankle deep dust
9) the old man sat there
10) (man) moving
11) He was too tired
12) (he) to go any further

For ease of discussion I have not mapped nonconceptual relationships and have excluded their signal words. This mapping of the primary line of conceptual reference gives us a good picture of the flow of conceptual relationship from one predication to the next. If we represent each predication as a circled number and draw in the reference lines, this pattern becomes even clearer:

Another way of studying patterns of conceptual relationshps for a set of predications is to draw the reference lines back to the "first" mention of the antecedent concept. To illustrate this consider again our sample paragraph.

1) An old man with steel rimmed spectacles and very dusty clothes sat by the side of the road.
2) There was a pontoon bridge across the river
3) carts, trucks, and men, women and children were crossing it.
4) The mule drawn carts staggered up the steep bank
5) soldiers helping push against the spokes of the wheels
6) The trucks ground up and away
7) (trucks) heading out of it all
8) the peasants plodded along in ankle deep dust
9) the old man sat there
10) (man) moving
11) He was too tired
12) (he) to go any further

Again if we represent a predication as a circled number and draw in the reference lines, the pattern becomes much clearer:



There are many ways of quantifying these and other patterns of conceptual and nonconceptual relationships. Again, these quantification techniques are discussed in detail in the Quantitative Grammar.

Application to Language Instruction

It will be only after much study and development that we will be able to identify the optimum ways, in terms of communication of using conceptual and nonconceptual relationships. However common sense tells us that there are some generalizations about the use of relationships

which should have immediate instructional implications. One such generalization is that "the more an individual understands and can use the various types of conceptual and nonconceptual relationships the more "flexibility in language use and comprehension he/she will have." Many of the "signals" for conceptual relationships are learned as part of the syntax of the English language and probably mastered by the time a child enters school. However, some types of conceptual relationships (specifically related concept, synonym and metaphoric) are not necessarily highly developed as a simple function of exposure to an English speaking culture. Perhaps overt teaching of such relationships cold increase general language proficiency.

Nonconceptual relationships lend themselves nicely to instruction. This is so primarily because most of the nonconceptual relationships have signal words that indicate their existence. Common sense tells us that a knowledge of these signal words might increase a student's ability to use nonconceptual relationships and their ability to identify these relationships while reading the printed word. Below I've listed the most commonly used signal words for each of the nonconceptual relationships:

Causation

1) Direct Cause: by

2) Result: consequently, hence, now, so, therefore, thus, as a consequence, for all that, as a result, whereupon, therefore, accordingly, hence, the result was, this is the reason why

3) Reason: because, because of, in that, so that, since, so, on account of, for the fact that

4) Inference: [illegible] otherwise, in that case, then

5)	Condition	now that, providing that, supposing that, considering that, granted that, admitting that, assuming that, presuming that, seeing that, unless... then, as long as, in so far as, if, where... there, when... then, no sooner... than, if only, even if

Contrast

1)	Antithesis:	But, yet, or rather, what is better, what is worse, contrariwise, conversely, oppositely, on the contrary, else, otherwise, otherwise, on the other hand
2)	Alternative:	alternatively, either... or, neither... nor, rather than, sooner than
3)	Comparison:	in comparison, by comparison, in contrast, like
4)	Concession:	however, anyhow, besides, else, nevertheless, nonetheless, only, still, though, in any case, in any event, for all that, in spite of that, all the same, anyway, though, at any rate, in any case, regardless of this

Addition

1)	Equality:	and, moreover, equally, too, besides, furthermore, what is more, likewise, similarly, as well, in addition, besides, at the same time
2)	Restatement:	indeed, actually, in actual fact, in fact, namely, that is, that is to say, another way of saying this
3)	Example: (Simple and Ordered)	for example, first, second, secondly, third, etc., one, two, three..., for a start, to begin with, next, then, finally, last but not least, for one thing, for another thing, another example would be
4)	Summation:	altogether, over all, then, thus, in all, therefore, all in all, in conclusion, in sum, in a word, in brief, briefly, in short, to sum up, to summarize

Time

1)	Subsequent Action:	afterwards, next, since, then, after that, later, in the end, shortly, subsequently, so far, as yet, before, until, finally
2)	Prior Action:	after, earlier, initially, in the beginning, originally, at first, previously, beforehand, formerly, before that, before now, until then, up to now, by now, by then
3)	Concurrent	simultaneously, while, meanwhile, meantime, at this point, at the same time

4) Ordered Time: first, second, secondly.., for a start, to begin with, next, then, finally

Embedded

that, the fact that

SUMMARY

Given its explanatory power, discourse analysis will probably have a strong influence on language related educational research and instructional practices for years to come. Discourse analysis is a relatively new technique known primarily by cognitive scientists. In this paper I have attempted to describe some of the basic principles of discourse analysis in such a way as to be understandable and useful to those interested in language related education. In doing this the reader should note that I have sacrificed some precision and detail in my explanations. Hopefully this sacrifice is outweighed by the increased utility of the principles described.

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